SEQUENCE LISTING

<110> CANON KABUSHIKI KAISHA, et al.

<120> Kit for immobilizing organic substance, organic substance-immobilized structure, and manufacturing methods therefor

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<151> 2004-01-26

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<223> Pseudomonas cichorii YN2 ; FERM BP-7375

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aagaacgtac tgctgggtaa atccgggctg caaccgacca gcgatgaccg tcgcttcgcc 240

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gccgacatct tttccctggc cggcaccaac gaccacatca ccccgtggaa gtcctgctac 1380

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cagagcatcc tgaacccgcc gggcaatccg aaatcgcgct acatgaccag caccgaagtg 1500

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catggcctgc gccaccccgt gcacaccgcg cgacacgcct tgaaactggg tggtcaactg 180

ggacgcgtgt tgctgggcga caccctgcat cccaccaacc cgcaagaccg tcgcttcgac 240

gatccggcgt ggagtctcaa tccctttttat cgtcgcagcc tgcaggcgta cctgagctgg 300

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gcgcacttcg cgttcgccct gctcaacgat gccgtgtcgc cgtccaacag cctgctcaat 420

ccgctggcga tcaaggaaat cttcaactcc ggcggcaaca gcctggtgcg cgggatcggc 480

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gtgccgccac agatcaacaa gtactacatt tttgacctca gcccccataa cagcttcgtc 720

cagttcgcgc tcaagaacgg cctgcaaacc ttcgtcatca gctggcgcaa tccggatgta 780

cgtcaccgcg aatggggcct gtcgacctac gtcgaagcgg tggaagaagc catgaatgtc 840

tgccgggcaa tcaccggcgc gcgcgaggtc aacctgatgg gcgcctgcgc tggcgggctg 900

accattgctg ccctgcaggg ccacttgcaa gccaagcgac agctgcgccg cgtctccagc 960

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gacgaacaga ccctggaggc ggccaagcgc cgctcctacc agaaaggtgt gctggaaggc 1080

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ctaagcagcg accccagggc ctggtactac gacgccaagc ccgtcgacgg tagctggtgg 1560

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Ala Ser Ala Arg Met Val Leu Arg Gln Ala Ile Lys Gln Pro Val His
        35                  40                  45

Ser Val Lys His Val Ala His Phe Gly Leu Glu Leu Lys Asn Val Leu
    50                  55                  60

Leu Gly Lys Ser Gly Leu Gln Pro Thr Ser Asp Asp Arg Arg Phe Ala
65                  70                  75                  80

Asp Pro Ala Trp Ser Gln Asn Pro Leu Tyr Lys Arg Tyr Leu Gln Thr
                85                  90                  95

Tyr Leu Ala Trp Arg Lys Glu Leu His Asp Trp Ile Asp Glu Ser Asn
            100                 105                 110

Leu Ala Pro Lys Asp Val Ala Arg Gly His Phe Val Ile Asn Leu Met
        115                 120                 125

Thr Glu Ala Met Ala Pro Thr Asn Thr Ala Ala Asn Pro Ala Ala Val
    130                 135                 140

Lys Arg Phe Phe Glu Thr Gly Gly Lys Ser Leu Leu Asp Gly Leu Ser
145                 150                 155                 160

His Leu Ala Lys Asp Leu Val His Asn Gly Gly Met Pro Ser Gln Val
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165 170 175

Asn Met Gly Ala Phe Glu Val Gly Lys Ser Leu Gly Val Thr Glu Gly
180 185 190

Ala Val Val Phe Arg Asn Asp Val Leu Glu Leu Ile Gln Tyr Lys Pro
195 200 205

Thr Thr Glu Gln Val Tyr Glu Arg Pro Leu Leu Val Val Pro Pro Gln
210 215 220

Ile Asn Lys Phe Tyr Val Phe Asp Leu Ser Pro Asp Lys Ser Leu Ala
225 230 235 240

Arg Phe Cys Leu Arg Asn Asn Val Gln Thr Phe Ile Val Ser Trp Arg
245 250 255

Asn Pro Thr Lys Glu Gln Arg Glu Trp Gly Leu Ser Thr Tyr Ile Glu
260 265 270

Ala Leu Lys Glu Ala Val Asp Val Val Thr Ala Ile Thr Gly Ser Lys
275 280 285

Asp Val Asn Met Leu Gly Ala Cys Ser Gly Gly Ile Thr Cys Thr Ala
290 295 300

Leu Leu Gly His Tyr Ala Ala Ile Gly Glu Asn Lys Val Asn Ala Leu
305 310 315 320

Thr Leu Leu Val Ser Val Leu Asp Thr Thr Leu Asp Ser Asp Val Ala
325 330 335

Leu Phe Val Asn Glu Gln Thr Leu Glu Ala Ala Lys Arg His Ser Tyr
340 345 350

Gln Ala Gly Val Leu Glu Gly Arg Asp Met Ala Lys Val Phe Ala Trp
355 360 365

Met Arg Pro Asn Asp Leu Ile Trp Asn Tyr Trp Val Asn Asn Tyr Leu
370 375 380

Leu Gly Asn Glu Pro Pro Val Phe Asp Ile Leu Phe Trp Asn Asn Asp
385 390 395 400

Thr Thr Arg Leu Pro Ala Ala Phe His Gly Asp Leu Ile Glu Leu Phe
405 410 415

Lys Asn Asn Pro Leu Ile Arg Pro Asn Ala Leu Glu Val Cys Gly Thr
420 425 430

Pro Ile Asp Leu Lys Gln Val Thr Ala Asp Ile Phe Ser Leu Ala Gly
435 440 445

Thr Asn Asp His Ile Thr Pro Trp Lys Ser Cys Tyr Lys Ser Ala Gln
450 455 460

Leu Phe Gly Gly Asn Val Glu Phe Val Leu Ser Ser Ser Gly His Ile
465 470 475 480

Gln Ser Ile Leu Asn Pro Pro Gly Asn Pro Lys Ser Arg Tyr Met Thr
485 490 495

Ser Thr Glu Val Ala Glu Asn Ala Asp Glu Trp Gln Ala Asn Ala Thr

500 505 510

Lys His Thr Asp Ser Trp Trp Leu His Trp Gln Ala Trp Gln Ala Gln
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Arg Ser Gly Glu Leu Lys Lys Ser Pro Thr Lys Leu Gly Ser Lys Ala
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Tyr Pro Ala Gly Glu Ala Ala Pro Gly Thr Tyr Val His Glu Arg
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35 40 45

Thr Ala Arg His Ala Leu Lys Leu Gly Gly Gln Leu Gly Arg Val Leu
50 55 60

Leu Gly Asp Thr Leu His Pro Thr Asn Pro Gln Asp Arg Arg Phe Asp
65 70 75 80

Asp Pro Ala Trp Ser Leu Asn Pro Phe Tyr Arg Arg Ser Leu Gln Ala
85 90 95

Tyr Leu Ser Trp Gln Lys Gln Val Lys Ser Trp Ile Asp Glu Ser Asn
100 105 110

Met Ser Pro Asp Asp Arg Ala Arg Ala His Phe Ala Phe Ala Leu Leu
115 120 125

Asn Asp Ala Val Ser Pro Ser Asn Ser Leu Leu Asn Pro Leu Ala Ile
130 135 140

Lys Glu Ile Phe Asn Ser Gly Gly Asn Ser Leu Val Arg Gly Ile Gly
145 150 155 160

His Leu Val Asp Asp Leu Leu His Asn Asp Gly Leu Pro Arg Gln Val
165 170 175

Thr Arg His Ala Phe Glu Val Gly Lys Thr Val Ala Thr Thr Thr Gly
180 185 190

Ala Val Val Phe Arg Asn Glu Leu Leu Glu Leu Ile Gln Tyr Lys Pro
195 200 205

Met Ser Glu Lys Gln Tyr Ser Lys Pro Leu Leu Val Val Pro Pro Gln
210 215 220

Ile Asn Lys Tyr Tyr Ile Phe Asp Leu Ser Pro His Asn Ser Phe Val
225 230 235 240

Gln Phe Ala Leu Lys Asn Gly Leu Gln Thr Phe Val Ile Ser Trp Arg

245 250 255

Asn Pro Asp Val Arg His Arg Glu Trp Gly Leu Ser Thr Tyr Val Glu
260 265 270

Ala Val Glu Glu Ala Met Asn Val Cys Arg Ala Ile Thr Gly Ala Arg
275 280 285

Glu Val Asn Leu Met Gly Ala Cys Ala Gly Gly Leu Thr Ile Ala Ala
290 295 300

Leu Gln Gly His Leu Gln Ala Lys Arg Gln Leu Arg Arg Val Ser Ser
305 310 315 320

Ala Thr Tyr Leu Val Ser Leu Leu Asp Ser Gln Leu Asp Ser Pro Ala
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Thr Leu Phe Ala Asp Glu Gln Thr Leu Glu Ala Ala Lys Arg Arg Ser
340 345 350

Tyr Gln Lys Gly Val Leu Glu Gly Arg Asp Met Ala Lys Val Phe Ala
355 360 365

Trp Met Arg Pro Asn Asp Leu Ile Trp Ser Tyr Phe Val Asn Asn Tyr
370 375 380

Leu Met Gly Lys Glu Pro Pro Ala Phe Asp Ile Leu Tyr Trp Asn Asn
385 390 395 400

Asp Asn Thr Arg Leu Pro Ala Ala Leu His Gly Asp Leu Leu Asp Phe
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Phe Lys His Asn Pro Leu Ser His Pro Gly Gly Leu Glu Val Cys Gly
420 425 430

Thr Pro Ile Asp Leu Gln Lys Val Thr Val Asp Ser Phe Ser Val Ala
435 440 445

Gly Ile Asn Asp His Ile Thr Pro Trp Asp Ala Val Tyr Arg Ser Thr
450 455 460

Leu Leu Leu Gly Gly Glu Arg Arg Phe Val Leu Ala Asn Ser Gly His
465 470 475 480

Val Gln Ser Ile Leu Asn Pro Pro Asn Asn Pro Lys Ala Asn Tyr Leu
485 490 495

Glu Gly Ala Lys Leu Ser Ser Asp Pro Arg Ala Trp Tyr Tyr Asp Ala
500 505 510

Lys Pro Val Asp Gly Ser Trp Trp Thr Gln Trp Leu Gly Trp Ile Gln
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Glu Arg Ser Gly Ala Gln Lys Glu Thr His Met Ala Leu Gly Asn Gln
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<210> 39
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<210> 49
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<210> 50
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<400> 50
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<210> 52
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<223> Complimentary chain for ssDNA of SEQ ID:5

<400> 56
ccgaacctcc acccccatcc tgatgagaac tccgatgcat atgcggctgg 50

<210> 57
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:6

<400> 57
gatccaatac tactatgggg ccgatgagtc ctcatagtca gggtggaggt tcggagct 58

<210> 58
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:6

<400> 58
ccgaacctcc accctgacta tgaggactca tcggccccat agtagtattg 50

<210> 59
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:7

<400> 59
gatcccatca tcatccggag aatttggatt ctacttttca gggtggaggt tcggagct 58

<210> 60

<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:7

<400> 60
ccgaacctcc accctgaaaa gtagaatcca aattctccgg atgatgatgg 50

<210> 61
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:8

<400> 61
gatccgctgc tcattttgag cctcagacta tgcctatgat tggtggaggt tcggagct 58

<210> 62
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:8

<400> 62
ccgaacctcc accaatcata ggcatagtct gaggctcaaa atgagcagcg 50

<210> 63
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:9

<400> 63
gatccgatca tcagcttcat cgtcctccgc atatgatgag gggtggaggt tcggagct 58

<210> 64
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:9

<400> 64
ccgaacctcc acccctcatc atatgcggag gacgatgaag ctgatgatcg 50

<210> 65
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:10

<400> 65

gatccgtttc gcgtcatcag tcgtggcatc cgcatgatct tggtggaggt tcggagct 58

<210> 66
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:10

<400> 66
ccgaacctcc accaagatca tgcggatgcc acgactgatg acgcgaaacg 50

<210> 67
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:11

<400> 67
gatccatgat gcagagggat catcatcagc ataatgcgca gggtggaggt tcggagct 58

<210> 68
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:11

<400> 68
ccgaacctcc accctgcgca ttatgctgat gatgatccct ctgcatcatg 50

<210> 69
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:12

<400> 69
gatccgttac tcttcatacg gtggatcatg cgccgcaaga tggtggaggt tcggagct 58

<210> 70
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:12

<400> 70
ccgaacctcc accatcttgc ggcgcatgat ccaccgtatg aagagtaacg 50

<210> 71
<211> 58
<212> DNA
<213> Artificial Sequence

<220>

<223> Coding chain for peptide of SEQ ID:13

<400> 71
gatcctctgt ttctgtgggt atgaagccga gtcctaggcc tggtggaggt tcggagct 58

<210> 72
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:13

<400> 72
ccgaacctcc accaggccta ggactcggct tcatacccac agaaacagag 50

<210> 73
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:14

<400> 73
gatcccatct tcagtctatg aagcctcgta ctcatgtgtt gggtggaggt tcggagct 58

<210> 74
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:14

<400> 74
ccgaacctcc acccaacaca tgagtacgag gcttcataga ctgaagatgg 50

<210> 75
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:15

<400> 75
gatccattcc taatgctgag actttgcgtc agcctgcgcg tggtggaggt tcggagct 58

<210> 76
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:15

<400> 76
ccgaacctcc accacgcgca ggctgacgca aagtctcagc attaggaatg 50

<210> 77
<211> 58
<212> DNA

<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:16

<400> 77
gatccgttcg cgtcatcagt tcgtggcatc cgcatgatct tggtggaggt tcggagct 58

<210> 78
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:16

<400> 78
ccgaacctcc accaagatca tgcggatgcc acgaactgat gacgcgaacg 50

<210> 79
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:17

<400> 79
gatccacggt gccgatttat aatacgggga ttttgaggac gggtggaggt tcggagct 58

<210> 80
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:17

<400> 80
ccgaacctcc acccgtcctc aaaatccccg tattataaat cggcaccgtg 50

<210> 81
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:18

<400> 81
gatcctatac tatgcatcat gggtcgacgt ttatacggcg gggtggaggt tcggagct 58

<210> 82
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:18

<400> 82
ccgaacctcc accccgccgt ataaacgtcg acccatgatg catagtatag 50

<210> 83
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:19

<400> 83
gatcctcgat gatgcatgtg aatattcgtc tcgggattct tggtggaggt tcggagct 58

<210> 84
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:19

<400> 84
ccgaacctcc accaagaatc ccgagacgaa tattcacatg catcatcgag 50

<210> 85
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:20

<400> 85
gatccgcgcc gatgcatcat atgaagagtc tgtatcgggc gggtggaggt tcggagct 58

<210> 86
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:20

<400> 86
ccgaacctcc acccgcccga tacagactct tcatatgatg catcggcgcg 50

<210> 87
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:21

<400> 87
gatccatgat gcagagggat catcatcagc atatgcgcag gggtggaggt tcggagct 58

<210> 88
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:21

<400> 88
ccgaacctcc acccctgcgc atatgctgat gatgatccct ctgcatcatg 50

<210> 89
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:22

<400> 89
gatccatgaa gactcatcat ggtaataatg cggtgtttct gggtggaggt tcggagct 58

<210> 90
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:22

<400> 90
ccgaacctcc acccagaaac accgcattat taccatgatg agtcttcatg 50

<210> 91
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:23

<400> 91
gatccttgga gccgcttcct catactcctc ggatgtatgc gggtggaggt tcggagct 58

<210> 92
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:23

<400> 92
ccgaacctcc acccgcatac atccgaggag tatgaggaag cggctccaag 50

<210> 93
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:24

<400> 93
gatcccagct gtatgagcct gattctgggc cgtgggctcc gggtggaggt tcggagct 58

<210> 94
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:24

<400> 94
ccgaacctcc acccggagcc cacggcccag aatcaggctc atacagctgg 50

<210> 95
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:25

<400> 95
gatcctggat gactaagatg cctactacgc atactaggta tggtggaggt tcggagct 58

<210> 96
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:25

<400> 96
ccgaacctcc accataccta gtatgcgtag taggcatctt agtcatccag 50

<210> 97
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:26

<400> 97
gatcccatca tcctatgtat tctatgacta gggcgttgcc tggtggaggt tcggagct 58

<210> 98
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:26

<400> 98
ccgaacctcc accaggcaac gccctagtca tagaatacat aggatgatgg 50

<210> 99
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:27

<400> 99
gatccggtag tgctcattct cggaatgatg ctgctcctgt gggtggaggt tcggagct 58

<210> 100
<211> 50

<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:27

<400> 100
ccgaacctcc acccacagga gcagcatcat tccgagaatg agcactaccg 50

<210> 101
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:28

<400> 101
gatcccattc gcctttgatg cagtatcata tgtcgggtac gggtggaggt tcggagct 58

<210> 102
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:28

<400> 102
ccgaacctcc acccgtaccc gacatatgat actgcatcaa aggcgaatgg 50

<210> 103
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:29

<400> 103
gatcctatgc gcatatgacg atgccgtctc ggtttttgcc gggtggaggt tcggagct 58

<210> 104
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:29

<400> 104
ccgaacctcc acccggcaaa aaccgagacg gcatcgtcat atgcgcatag 50

<210> 105
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:30

<400> 105
gatccgcttg tccgcctacg cagtctcggt attgcggtgg aggttcggag ct 52

<210> 106
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:30

<400> 106
ccgaacctcc accgcaatac cgagactgcg taggcggaca agcg 44

<210> 107
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:31

<400> 107
gatccgcttg taatggcatg ttggcctttc agtgcggtgg aggttcggag ct 52

<210> 108
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:31

<400> 108
ccgaacctcc accgcactga aaggccaaca tgccattaca agcg 44

<210> 109
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:32

<400> 109
gatccgcttg tacgccgaag ccgggcaagc attgcggtgg aggttcggag ct 52

<210> 110
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:32

<400> 110
ccgaacctcc accgcaatgc ttgcccggct tcggcgtaca agcg 44

<210> 111
<211> 972
<212> DNA
<213> Artificial Sequence

<220>
<223> HPR coding artificial sense-sequence

<400> 111
gtttatgcca accaaacccc accaagcaag gcgaggggtg gaggttcgca acttacccct 60

accttctacg acaattcatg tcctaatgtc tctaacatcg tacgggatac tattgtcaat 120

gagctaagat cagaccctcg tattgccgcg agcatccttc gtcttcactt ccacgactgc 180

tttgttaatg gttgtgacgc atcgatcttg ttagacaaca caacatcatt tcgaacagag 240

aaagatgcgt ttggaaacgc aaactcggca agaggatttc cagtgattga tagaatgaaa 300

gccgcggtgg agagtgcatg cccaagaacc gtttcatgcg cagatttgct caccattgca 360

gctcaacaat ctgtcacttt ggcgggaggt ccttcttgga gagttccttt gggcagaaga 420

gatagcttac aagcatttct ggatcttgct aatgcaaatc ttccagctcc attcttcaca 480

cttccacaac ttaaagacag ctttagaaat gttggcctca accgttcttc tgatctcgtt 540

gcactgtccg ggggccacac atttggtaaa aatcagtgtc ggtttattat ggacagatta 600

tacaacttca gcaacaccgg tttacccgat cctactctca acactactta tctccaaact 660

cttcgtggac tatgtcccct caatggtaat ctaagcgctt tggtggattt tgatctacgt 720

acgccaacga tttttgacaa caaatactat gtgaatctcg aagaggaaaa aggacttatc 780

caaagcgacc aagagttgtt ctctagcccc aatgccactg acacaatccc tttggtgaga 840

tcatttgcta atagcacaca aacattcttc aatgcatttg tggaggcgat ggataggatg 900

ggaaacatta cacctcttac aggaactcaa ggacagatca ggttgaattg tagggtggtg 960

aactccaact ct 972

<210> 112
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 112
gtttatgcca accaaacccc accaagcaag gcgaggggtg gaggttcgca acttacccct 60

accttctacg acaattcatg tcctaatgtc tctaacatcg tacgggatac tattgtcaat 120

<210> 113
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 113
gtttatgcca accaaacccc accaagcaag 30

<210> 114
<211> 120
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 114
tgttgtctaa caagatcgat gcgtcacaac cattaacaaa gcagtcgtgg aagtgaagac 60

gaaggatgct cgcggcaata cgagggtctg atcttagctc attgacaata gtatcccgta 120

<210> 115
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 115
tgttgtctaa caagatcgat gcgtcacaac 30

<210> 116
<211> 120
<212> DNA
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<220>
<223> Primer for PCR multiplication

<400> 116
atcgatcttg ttagacaaca caacatcatt tcgaacagag aaagatgcgt ttggaaacgc 60

aaactcggca agaggatttc cagtgattga tagaatgaaa gccgcggtgg agagtgcatg 120

<210> 117
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 117
atcgatcttg ttagacaaca caacatcatt 30

<210> 118
<211> 120
<212> DNA
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<220>
<223> Primer for PCR multiplication

<400> 118
tcttctgccc aaaggaactc tccaagaagg acctcccgcc aaagtgacag attgttgagc 60

tgcaatggtg agcaaatctg cgcatgaaac ggttcttggg catgcactct ccaccgcggc 120

<210> 119
<211> 30
<212> DNA
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<220>
<223> Primer for PCR multiplication

<400> 119
tcttctgccc aaaggaactc tccaagaagg 30

<210> 120
<211> 120
<212> DNA
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<220>
<223> Primer for PCR multiplication

<400> 120
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ttccagctcc attcttcaca cttccacaac ttaaagacag ctttagaaat gttggcctca 120

<210> 121
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 121
gagttccttt gggcagaaga gatagcttac 30

<210> 122
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 122
ccggtgttgc tgaagttgta taatctgtcc ataataaacc gacactgatt tttaccaaat 60

gtgtggcccc cggacagtgc aacgagatca gaagaacggt tgaggccaac atttctaaag 120

<210> 123
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 123
ccggtgttgc tgaagttgta taatctgtcc 30

<210> 124
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 124

tacaacttca gcaacaccgg tttacccgat cctactctca acactactta tctccaaact 60

cttcgtggac tatgtcccct caatggtaat ctaagcgctt tggtggattt tgatctacgt 120

<210> 125
<211> 30
<212> DNA
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<220>
<223> Primer for PCR multiplication

<400> 125
tacaacttca gcaacaccgg tttacccgat 30

<210> 126
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 126
cagtggcatt ggggctagag aacaactctt ggtcgctttg gataagtcct ttttcctctt 60

cgagattcac atagtatttg ttgtcaaaaa tcgttggcgt acgtagatca aaatccacca 120

<210> 127
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 127
cagtggcatt ggggctagag aacaactctt 30

<210> 128
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 128
ctctagcccc aatgccactg acacaatccc tttggtgaga tcatttgcta atagcacaca 60

aacattcttc aatgcatttg tggaggcgat ggataggatg ggaaacatta cacctcttac 120

<210> 129
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 129
ctctagcccc aatgccactg acacaatccc 30

<210> 130
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 130
agagttggag ttcaccaccc tacaattcaa cctgatctgt ccttgagttc ctgtaagagg 60

tgtaatgttt cc 72

<210> 131
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 131
agagttggag ttcaccaccc tacaattcaa 30

<210> 132
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 132
agtcggatcc gtttatgcga atcagactcc gccttctaag gcgcggggtg gaggttcg 58

<210> 133
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 133
aggcctcgag agagttggag ttcaccaccc taca 34

<210> 134
<211> 1695
<212> DNA
<213> Artificial Sequence

<220>
<223> GroEL coding artificial sense-sequence

<400> 134
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gacgtaaaat tcggtaacga cgctcgtgtg aaaatgctgc gcggcgtaaa cgtactggca 120

gatgcagtga aagttaccct cggtccaaaa ggccgtaacg tagttctgga taaatctttc 180

ggtgcaccga ccatcaccaa agatggtgtt tccgttgctc gtgaaatcga actggaagac 240

aagttcgaaa atatgggtgc gcagatggtg aaagaagttg cctctaaagc aaacgacgct 300

gcaggcgacg gtaccaccac tgcaaccgta ctggctcagg ctatcatcac tgaaggtctg 360

aaagctgttg ctgcgggcat gaacccgatg gacctgaaac gtggtatcga caaagcggtt 420

accgctgcag ttgaagaact gaaagcgctg tccgtaccat gctctgactc taaagcgatt 480

gctcaggttg gtaccatctc cgctaactcc gacgaaaccg taggtaaact gatcgctgaa 540

gcgatggaca aagtcggtaa agaaggcgtt atcaccgttg aagacggtac cggtctgcag 600

gacgaactgg acgtggttga aggtatgcag ttcgaccgtg gctacctgtc tccttacttc 660

atcaacaagc cggaaactgg cgcagtagaa ctggaaagcc cgttcatcct gctggctgac 720

aagaaaatct ccaacatccg cgaaatgctg ccggttctgg aagctgttgc caaagcaggc 780

aaaccgctgc ttatcatcgc tgaagatgta gaaggcgaag cgctggcaac tgctgttgtt 840

aacaccattc gtggcatcgt gaaagtcgct gcggttaaag caccgggctt cggcgatcgt 900

cgtaaagcta tgctgcagga tatcgcaacc ctgactggcg gtaccgtgat ctctgaagag 960

atcggtatgg agctggaaaa agcaaccctg gaagacctgg gtcaggctaa acgtgttgtg 1020

atcaacaaag acaccaccac tatcatcgat ggcgtgggtg aagaagctgc aatccagggc 1080

cgtgttgctc agatccgtca gcagattgaa gaagcaactt ctgactacga ccgtgaaaaa 1140

ctgcaggaac gcgtagcgaa actggcaggc ggcgttgcag ttatcaaagt gggtgctgct 1200

accgaagttg aaatgaaaga gaaaaaagca cgcgttgaag atgccctgca cgcgacccgt 1260

gctgcggtag aagaaggcgt ggttgctggt ggtggtgttg cgctgatccg cgtagcgtct 1320

aaactggctg acctgcgtgg tcagaacgaa gaccagaacg tgggtatcaa agttgcactg 1380

cgtgcaatgg aagctccgct gcgtcagatc gtattgaact gcggcgaaga accgtctgtt 1440

gttgctaaca ccgttaaagg cggcgacggc aactacggtt acaacgcagc aaccgaagaa 1500

tacggcaaca tgatcgacat gggtatcctg gacccaacca aagtaactcg ttctgctctg 1560

cagtacgcag cttctgtggc tggcctgatg atcaccaccg aatgcatggt taccgacctg 1620

ccgaaaaacg atgcagctga cttaggcgct gctggcggta tgggcggcat gggtggcatg 1680

ggcggcatga tgtaa 1695

<210> 135
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 135
gtttatgcga atcagactcc gccttctaag gcgcggggtg gaggttcgat ggcagctaaa 60

gacgtaaaat tcggtaacga cgctcgtgtg aaaatgctgc gcggcgtaaa cgtactggca 120

<210> 136
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 136
gtttatgcga atcagactcc gccttctaag 30

<210> 137
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 137
gagcaacgga aacaccatct ttggtgatgg tcggtgcacc gaaagattta tccagaacta 60

cgttacggcc ttttggaccg agggtaactt tcactgcatc tgccagtacg tttacgccgc 120

<210> 138
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 138
gagcaacgga aacaccatct ttggtgatgg 30

<210> 139
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 139
agatggtgtt tccgttgctc gtgaaatcga actggaagac aagttcgaaa atatgggtgc 60

gcagatggtg aaagaagttg cctctaaagc aaacgacgct gcaggcgacg gtaccaccac 120

<210> 140
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 140
agatggtgtt tccgttgctc gtgaaatcga 30

<210> 141
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 141
aaccgctttg tcgataccac gtttcaggtc catcgggttc atgcccgcag caacagcttt 60

cagaccttca gtgatgatag cctgagccag tacggttgca gtggtggtac cgtcgcctgc 120

<210> 142
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 142
aaccgctttg tcgataccac gtttcaggtc 30

<210> 143
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 143
gtggtatcga caaagcggtt accgctgcag ttgaagaact gaaagcgctg tccgtaccat 60

gctctgactc taaagcgatt gctcaggttg gtaccatctc cgctaactcc gacgaaaccg 120

<210> 144
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 144
gtggtatcga caaagcggtt accgctgcag 30

<210> 145
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 145
tcaaccacgt ccagttcgtc ctgcagaccg gtaccgtctt caacggtgat aacgccttct 60

ttaccgactt tgtccatcgc ttcagcgatc agtttaccta cggtttcgtc ggagttagcg 120

<210> 146
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> Primer for PCR multiplication

<400> 146
tcaaccacgt ccagttcgtc ctgcagaccg 30

<210> 147
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 147
gacgaactgg acgtggttga aggtatgcag ttcgaccgtg gctacctgtc tccttacttc 60

atcaacaagc cggaaactgg cgcagtagaa ctggaaagcc cgttcatcct gctggctgac 120

<210> 148
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 148
gacgaactgg acgtggttga aggtatgcag 30

<210> 149
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 149
cttcgccttc tacatcttca gcgatgataa gcagcggttt gcctgctttg gcaacagctt 60

ccagaaccgg cagcatttcg cggatgttgg agattttctt gtcagccagc aggatgaacg 120

<210> 150
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 150
cttcgccttc tacatcttca gcgatgataa 30

<210> 151
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 151
tgaagatgta gaaggcgaag cgctggcaac tgctgttgtt aacaccattc gtggcatcgt 60

gaaagtcgct gcggttaaag caccgggctt cggcgatcgt cgtaaagcta tgctgcagga 120

<210> 152
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 152
tgaagatgta gaaggcgaag cgctggcaac 30

<210> 153
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 153
cacaacacgt ttagcctgac ccaggtcttc cagggttgct ttttccagct ccataccgat 60

ctcttcagag atcacggtac cgccagtcag ggttgcgata tcctgcagca tagctttacg 120

<210> 154
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 154
cacaacacgt ttagcctgac ccaggtcttc 30

<210> 155
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 155
gtcaggctaa acgtgttgtg atcaacaaag acaccaccac tatcatcgat ggcgtgggtg 60

aagaagctgc aatccagggc cgtgttgctc agatccgtca gcagattgaa gaagcaactt 120

<210> 156
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 156
gtcaggctaa acgtgttgtg atcaacaaag 30

<210> 157

<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 157
tctttcattt caacttcggt agcagcaccc actttgataa ctgcaacgcc gcctgccagt 60

ttcgctacgc gttcctgcag tttttcacgg tcgtagtcag aagttgcttc ttcaatctgc 120

<210> 158
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 158
tctttcattt caacttcggt agcagcaccc 30

<210> 159
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 159
accgaagttg aaatgaaaga gaaaaaagca cgcgttgaag atgccctgca cgcgacccgt 60

gctgcggtag aagaaggcgt ggttgctggt ggtggtgttg cgctgatccg cgtagcgtct 120

<210> 160
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 160
accgaagttg aaatgaaaga gaaaaaagca 30

<210> 161
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 161
agttcaatac gatctgacgc agcggagctt ccattgcacg cagtgcaact ttgataccca 60

cgttctggtc ttcgttctga ccacgcaggt cagccagttt agacgctacg cggatcagcg 120

<210> 162
<211> 30
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 162
agttcaatac gatctgacgc agcggagctt 30

<210> 163
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 163
gcgtcagatc gtattgaact gcggcgaaga accgtctgtt gttgctaaca ccgttaaagg 60

cggcgacggc aactacggtt acaacgcagc aaccgaagaa tacggcaaca tgatcgacat 120

<210> 164
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 164
gcgtcagatc gtattgaact gcggcgaaga 30

<210> 165
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 165
caggtcggta accatgcatt cggtggtgat catcaggcca gccacagaag ctgcgtactg 60

cagagcagaa cgagttactt tggttgggtc caggataccc atgtcgatca tgttgccgta 120

<210> 166
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 166
caggtcggta accatgcatt cggtggtgat 30

<210> 167
<211> 95
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 167
ttacatcatg ccgcccatgc cacccatgcc gcccataccg ccagcagcgc ctaagtcagc 60

tgcatcgttt ttcggcaggt cggtaaccat gcatt 95

<210> 168
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 168
aggcctcgag ttacatcatg ccgcccatgc 30

<210> 169
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for PCR multiplication

<400> 169
ttacatcatg ccgcccatgc cacccatgcc gcc 33

<210> 170
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> anodisk membrane-binding peptide

<400> 170
Tyr Ala Gln Thr Pro Pro Ser Arg
1 5

<210> 171
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> anodisk membrane-binding peptide

<400> 171
Leu Tyr Ala Gln Gln Thr Pro Pro Ser Arg Ser Arg
1 5 10

<210> 172
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> anodisk membrane-binding peptide

<400> 172
Val Tyr Ala Asn Gln Thr Pro Pro Ser Arg Ala Arg Ala Lys Ala Arg
1 5 10 15

<210> 173
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> anodisk membrane-binding peptide

<400> 173
Val Tyr Ala Asn Gln Thr Pro Pro Ser Lys Ala Arg Tyr Ala Gln
1 5 10 15
Thr Pro Pro Ser Arg
20

<210> 174
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:170

<400> 174
gatcctatgc gcagactccg ccttctcggg gtggaggttc ggagct 46

<210> 175
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:170

<400> 175
ccgaacctcc accccgagaa ggcggagtct gcgcatag 38

<210> 176
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:171

<400> 176
gatccctcta tgcgcaacag actccgcctt ctcggtctcg gggtggaggt tcggagct 58

<210> 177
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:171

<400> 177
ccgaacctcc accccgagac cgagaaggcg gagtctgttg cgcataagag 50

<210> 178
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:1

<400> 178
gatccgttta tgcgaatcag actccgcctt ctcgcgcacg cgcaaaggcg cggggtggag 60
gttcggagct 70

<210> 179
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:1

<400> 179
ccgaacctcc accccgcgcc tttgcgcgtg cgcgagaagg cggagtctga ttcgcataaa 60
cg 62

<210> 180
<211> 82
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding chain for peptide of SEQ ID:1

<400> 180
gatccgttta tgcgaatcag actccgcctt ctaaggcgcg gtatgcgcag actccgcctt 60
ctcggggtgg aggttcggag ct 82

<210> 181
<211> 74
<212> DNA
<213> Artificial Sequence

<220>
<223> Complimentary chain for ssDNA of SEQ ID:1

<400> 181
ccgaacctcc accccgagaa ggcggagtct gcgcataccg cgccttagaa ggcggagtct 60
gattcgcata aacg 74